WHAT IS CLAIMED IS:

1. A method of producing a three dimensional ultrasonic image containing spatial information of the placement or operation of an invasive medical device (30) comprising:

acquiring a three dimensional ultrasonic image data set from a volumetric region (120) containing an invasive medical device (30);

volume rendering the three dimensional ultrasonic image data set to produce a three dimensional ultrasonic image (100);

transmitting the three dimensional ultrasonic image (100) to an interventional system;

converting the three dimensional ultrasonic image (100) to a frame of reference of the interventional system;

aligning the three dimensional ultrasonic image (100) with position or image data of the invasive medical device (30); and

combining the position or image data of the invasive medical device (30) with the three dimensional ultrasonic image (100).

2. The method of Claim 1, wherein acquiring further comprises acquiring a three dimensional ultrasonic image data set with an array transducer (50); and further comprising acquiring transducer position information, wherein transmitting further comprises transmitting the transducer position information to the interventional system.

3. The method of Claim 1, wherein the method is performed to produce three dimensional ultrasonic images for real time display.

4. A method of producing a three dimensional ultrasonic image (100) containing spatial information of the placement or operation of an invasive medical device (30) comprising:

acquiring a three dimensional ultrasonic image data set from a volumetric region (120) containing an invasive medical device (30);

scan converting the three dimensional ultrasonic image data set;

transmitting the scan converted three dimensional ultrasonic image data set to an interventional system (20);

converting the three dimensional ultrasonic image data set to a frame of reference of the interventional system (20);

combining the three dimensional ultrasonic image data set with position or image data of the invasive medical device (30); and

volume rendering the combined data to produce a composite three dimensional image (100).

5. The method of Claim 4, wherein acquiring further comprises acquiring a three dimensional ultrasonic image data set with an array transducer (50); and further comprising acquiring transducer position information, wherein transmitting further comprises transmitting the transducer position information to the interventional system (20).

6. The method of Claim 4, wherein the method is performed to produce composite three dimensional images (100) for real time display.

7. A method of producing a three dimensional ultrasonic image (100) containing spatial information of the placement or operation of an invasive medical device (30) comprising:

transmitting position or image data of an invasive medical device (30) to an ultrasonic imaging system (12);

converting the device position or image data to a frame of reference of the ultrasonic imaging system (12);

acquiring a three dimensional ultrasonic image data set from a volumetric region (120) containing the invasive medical device (30);

scan converting the three dimensional ultrasonic image data set;

combining the scan converted three dimensional ultrasonic image data set with the position or image data of the invasive medical device (30); and

volume rendering the combined data to produce a composite three dimensional image (100).

8. The method of Claim 7, wherein the method is performed to produce composite three dimensional images for real time display.

9. A method of producing a three dimensional ultrasonic image (100) containing spatial information of the placement or operation of an invasive medical device (30) comprising:

transmitting volume rendered video data from an interventional system (20) to an ultrasonic imaging system (12);

acquiring a three dimensional ultrasonic image data set from a volumetric region (120) containing an invasive medical device (30);

scaling and orienting the three dimensional ultrasonic image data set to a frame of reference of the interventional system (20);

volume rendering the three dimensional ultrasonic image data set to produce a three dimensional ultrasonic image (100); and

combining the interventional system video data and the three dimensional ultrasonic image (100).

10. The method of Claim 9, wherein the method is performed to produce combined interventional system video data and three dimensional ultrasonic images (100) for real time display.

11. A method of producing a three dimensional ultrasonic image (100) containing spatial information of the placement or operation of an invasive medical device (30) comprising:

transmitting volume rendered three dimensional ultrasound video data of a volumetric region (120) containing an invasive medical device (30) to an interventional system (20);

scaling and orienting interventional system video data to a frame of reference of the ultrasound video data;

volume rendering the interventional system video data; and

combining the volume rendered interventional system video data and the volume rendered three dimensional ultrasound video data.

12. The method of Claim 11, wherein the method is performed to produce combined volume rendered interventional system video data and three dimensional ultrasound video data for real time display.